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Michael Aaron Geline* (geline@math.niu.edu), Northern Illinois University, Department of Mathematics, Watson Hall, DeKalb, IL 60115. *Integral representations of defect groups, and irreducible character heights.*

Richard Brauer conjectured that the irreducible characters in a p -block of a finite group should all be of height zero if and only if the defect groups of the block are abelian. Reinhard Knörr found a relationship between this conjecture and the sources of the lattices (ie integral representations) affording the irreducible characters. In particular, he showed that if an abelian p -group possesses no lattices which simultaneously have rank divisible by p and satisfy a property he called virtual irreducibility, then all blocks of finite groups with this particular defect group would contain height zero characters only.

Unfortunately, lattices satisfying Knörr's conditions can be constructed quite easily. We will outline Knörr's work, give a construction of some "bad" lattices, and pose the question of how to go about proving Brauer's conjecture in view of their existence. (Received September 03, 2010)